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*Interface* is a Web-based journal. You can receive notice of a new issue of *Interface Online* by joining the "Interface" list via the NIH Listserv [<http://list.nih.gov/archives/interface.html>].

You can receive information specific to the OS/390 systems by joining the "CIT-Titan-News" list [<http://list.nih.gov/archives/CIT-Titan-News.html>].

*This issue includes the article on rates for fiscal year 2002 that was sent by separate e-mail.*

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*Forbes* magazine listed NIH's site as its favorite of the 33 "general health" Web sites reviewed earlier this year. [Http://www.nih.gov](http://www.nih.gov) is one of the most frequently visited federal government Web sites.

	<i>June</i>	<i>July</i>
Total hits for the month	32,091,892	33,864,624
Hits per day	1,069,729	1,092,407
Number of different individuals	317,144	364,349

Server has been up 100% for 423 consecutive days (as of September 5).

# Features

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## New Way to Locate Employees—The NIH Enterprise Directory

The NIH Enterprise Directory (NED) is a centrally-coordinated, electronic directory that CIT is developing to maintain accurate, current information for all individuals using NIH services or facilities. When fully implemented, NED will provide individuals and application developers with a single, reliable source of information on those individuals. If you want to know — who works at NIH, what organization they work for, where they work, how they can be contacted, services and facilities they are authorized to use — NED will provide answers. (Only publicly-available information is provided.)

The information on a person in NED includes — telephone, pager, and fax numbers; e-mail address; building, room; mail stop, postal address, delivery address, and Web address. NED also stores a person's title, IC, organizational unit, and organizational status (Civil Service or Public Health Service employee, fellow, contractor, guest, volunteer, summer employee, or tenant).

NED is the only system that maintains all this information for the entire NIH workforce. In the future, other groups such as non-NIH CIT customers and grantees will likely be included in NED as well.



*Finding people quickly with NED*

NIH Administrative Officers and their assistants have been using NED's Web interface to obtain and maintain information since July 2000.

### Development of NED

NIH employees and application development will benefit because NED

- eliminates the need for each application to collect and maintain its own copy of locator information
- keeps information consistent by automatically updating information in multiple places
- creates and manages a unique ID for each NIH-affiliated worker that applications can use instead of a social security number. (This unique ID will never be assigned to anyone else, even when the employee leaves NIH.)
- facilitates deregistration or deactivation of services (e.g., card keys, computer accounts, email address, books, telephone directory listing) when individuals leave NIH
- improves security and privacy

NED guards against duplicate records by performing a thorough database search to determine if the individual already has a unique 10-digit ID (or UID), before generating one for a person.

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In developing NED, CIT placed strong emphasis on building a system that would contain more consistent data than found in other NIH databases. For example, all individuals who work in the Clinical Center can be listed by searching for "buildingName = 10" (NED does not recognize "Clinical Center," "Clinical Ctr," or "ACRF").

## Connections to Other Systems

NED is designed to connect to other systems for sending and receiving updated information. How will this work when the system is fully implemented? When an individual changes a telephone number in the e-mail system, NED will update its information *and* send the new number to the NIH telephone operators, the ID badge/cardkey system, the CIT help desk, and other connected systems.

In the near future, NED will be connected to NIH's various payroll systems and will periodically reconcile its data against those systems – automatically adding records for newly hired employees who have not been registered, deleting records of employees who have left NIH, updating the organizational affiliation of employees who have moved to a new IC, and so forth.

As one of the first steps in connecting NED to other systems, NED data is now available to application developers via CIT's DB2 server on MVS. For detailed information on how to access it, you can visit the NED Web site [<http://nedinfo.nih.gov/>] or contact TASC.



## NIH 508 Work Group Helps Promote Accessible IT

Information technology at NIH will be more accessible to people with disabilities, thanks to the work of a dedicated cadre of NIH staff, many of whom are IT professionals. Created by the NIH Information Technology Management Committee (ITMC), the Section 508 Work Group has 22 members representing 12 NIH ICs. CIT's Bronna Cohen and Marilyn Allen served as cochairs. From January to May 2001, the group studied the IT portion of the Section 508 standards and developed recommendations for implementing them at NIH.

Section 508 (the Rehabilitation Act of 1973, as amended) was intended to ensure that Federal employees and members of the public with disabilities have access to and use of information and data comparable to that of individuals without disabilities. Enforcement of Section 508 standards began on June 21, 2001. However, Federal agencies are not required to retrofit existing electronic and information technology.

The requirement to make Web sites accessible to people with disabilities may be the best known aspect of the Section 508 standards. However, several other technology areas are encompassed by Section 508.

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- **Software Applications and Operating Systems**

Included in this category are software systems developed by or for the federal government, pre-existing systems substantially modified, and off-the-shelf software purchased for official use after the June 21 deadline.

- **Web-based Intranet and Internet Information and Applications**

Web sites for both public and internal use—developed or substantially modified after June 21—are included, as well as HTML design and coding, and software that generates or processes Web site information. Web sites with multimedia also must comply with the requirements for video and multimedia products (see the video section below). NIH ICs have set up a number of “accessibility workstations,” where NIH web designers can test their Web sites for accessibility using state-of-the-art tools. See *Interface* 219, June 25, 2001.

[<http://datacenter.cit.nih.gov/interface/interface219/508.html>]

- **Telecommunications Products**

These products include a wide variety of telephone equipment—including pagers, voice mail systems, fax on demand, and toll-free “800” numbers. The group found that no telecommunications devices currently on the market are fully Section 508 compliant. This presents an interim problem that will have to be addressed as soon as possible—with product modifications, workarounds, and human intervention (i.e., increased operator assistance).

- **Video and Multimedia Products**

This category includes videocast and videoconferenced presentations (both live and archived or videotaped) and training and informational materials on videotape, audiotape, CD and DVD. Video must be captioned, as well as audio-described (if there is substantial action or movement). Audio must be available in alternative formats (e.g., synchronized text), and graphics and charts must be accompanied by a text description.

- **Self-Contained, Closed Products**

“Stand-alone” products and office equipment (e.g., copiers, printers, information kiosks) must be usable without having to attach an assistive device.

- **Desktop and Portable Computers**

To be Section 508 compliant, computer equipment must be usable with assistive technologies (e.g., screen readers, voice recognition systems, alternative input devices).

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The work group's findings and recommendations were transmitted to the NIH Office of Equal Opportunity (OEO), which has the oversight for Section 508 implementation at NIH.

## More Information

The ITMC Section 508 Work Group has created an NIH Section 508 Web site [<http://508.nih.gov>]. This site contains other information, essential references, and the full text of the group's reports for each topic area.

If you develop or oversee the development of software or Web sites – or even if you simply purchase electronic and computer equipment – this site is a “must.”



## A New Antivirus Tool for Network Administrators—ePolicy Orchestrator

Protecting data from the ever-present threat of viruses is a big concern for people who depend on their computer for work. CIT offers McAfee's ePolicy Orchestrator (ePO) software to assist NIH administrators and security officers in installing and maintaining the latest antivirus protection on all desktop computers and servers. In addition, CIT provides consultation and support for ePO. The software was purchased as a component of the NIH security infrastructure. Therefore, there is no direct charge for NIH IC's use of the software.

### What is ePO?

ePO is a management tool for McAfee antivirus software. Network administrators and security officers can use ePO to configure and maintain antivirus protection on all client machines on a network. From a server or remote console, ePO allows administrators to set, distribute and enforce antivirus policy – as well as monitor virus activity – on all the client machines.

From a single console and for the entire network, administrators can use ePO to:

- **view** the properties and antivirus status of all client machines and set policies
- **manage** the way McAfee antivirus software products update the virus definition (.DAT) files
- **initiate** scans to search for viruses on client machines – especially important during an outbreak
- **schedule tasks** such as software upgrades or scans
- **manage antivirus protection** by IP range, Windows NT domain, or other logical grouping
- **capture data** on antivirus activity on any client machine
- **install antivirus software** and store products

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ePO supports policy management and reporting for McAfee products (versions 4.03 and higher; CIT recommends version 4.5) – VirusScan, NetShield, GroupShield and WebShield SMTP.

## **ePO Components**

The three main components of ePO include the server, the console (user interface), and the agent (a small program that resides on each computer, enforcing the policies and activating the tasks that the administrator defines).

- **Server**

The server includes a robust database that accrues large amounts of data regarding McAfee product operation; a report-generating engine that lets you monitor virus protection performance (e.g., by computers, events, software versions); and a repository for the software you deploy to your network. The ePO server runs on Microsoft Windows NT and Windows 2000 platforms, and uses Microsoft Data Engine (MSDE) v1.0 or Microsoft SQL Server 7 for its database.

- **ePO Console**

The console provides a user interface (based on the Microsoft Management Console) that manages antivirus protection. The console allows the administrator to view the properties of the client machine, set and enforce antivirus policies, schedule tasks, and view and customize reports to monitor deployment and virus activity.

- **ePO Agent**

This part is pushed to the client machines (called “agent hosts”) to gather and report data, install software, and report any events back to the server. When further activity occurs on the client machine (related to McAfee products), the agent notifies the server of the activity.

## **Advantages of ePO**

Some of the key advantages of the ePO software are:

### ***Automated Tasks***

ePO reduces the time that the support staff spends checking and updating each client machine’s antivirus software.

### ***Real-Time Policy Management and Updating***

The client can be configured to report software versions and any infected files to the server at regular intervals. ePO also features an agent wakeup call that allows the administrator to request this information immediately.

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### ***Policy Management***

A single set of virus protection policies can be set and enforced for the entire network or on a per-group basis.

### ***Reporting***

A full-featured reporting component allows the administrator to request several specialized reports on the status of total virus defense for the network. All of the data for those reports is captured in the server's database for all of the client machines.

### ***Software Distribution***

ePO provides a centralized repository for the McAfee products that the administrator chooses to deploy. After the agent is installed on each client machine, it can review the configuration and determine what virus protection policies to enforce for that client. ePO can also deploy the software to that client via the Console.

### ***Outbreak Management***

ePO offers an agent wakeup call that can force the client to request a .DAT update. This function offers greater control in the prevention of and response to outbreak situations.

CIT provides consultation and support services for ePO implementation. The ePO software can be downloaded from the NIH Antivirus Web site [<http://antivirus.nih.gov>] by clicking on "Downloads," "Antivirus Server" and "Management Tools."

For more information regarding ePO, please contact TASC.



## **Computer Security Tips for Everyone**

*Better be despised for too anxious apprehensions, than ruined by too confident security.*

Edmund Burke

Everyone has a responsibility to ensure that our computers and the data they contain are safe. Hopefully, these "security tips" in *Interface* will help users remain vigilant in safeguarding their data—and create a more secure IT environment at NIH.

Today, private and government computer systems are constantly under attack—and NIH is no exception. Hacking into computer systems seems to have become an international sport, with attempted break-ins a daily event. Because these attacks pose a constant threat, good security has become a critical element in the IT operations of all organizations.



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## **Intrusions & Malicious Software**

*Adapted from the NIH Computer Awareness Training Webpage  
[<http://www.oir.nih.gov/sectrain>]*

Intruders employ a variety of techniques to gain unauthorized access. Sophisticated tools are readily available and easy to use, even for the novice hacker.

Password crackers use programs that repeatedly attempt to log onto a system by using a series of easily guessed passwords, or by using a dictionary as a source of potential passwords. This approach can be defeated, if users follow the guidelines for password selection and security.

Intruders can take advantage of vulnerabilities (such as a configuration error) that grant file access to all users, or make use of “trap doors” originally inserted by system developers to facilitate system maintenance. NIH system administrators are constantly monitoring our computer systems for these types of threats.

Network spoofing is a way for an intruder to gain access. An intruder sets up a program to trick a computer system into thinking it is being accessed by an authorized user. When the user attempts to log onto his or her system, the intruder’s program collects the user’s password and returns a message to the user that the system is unavailable. An intruder’s program can collect hundreds of valid passwords. Although NIH system administrators are continually on the lookout for intrusions, everyone should change the password on a regular basis to help protect against this type of intrusion.

Trojan horse attacks pose one of the most serious threats to computer security, typically disguising themselves as something harmless. A Trojan horse can cause havoc in a number of ways, including sending itself to everybody on an email address book, erasing or modifying files, and downloading another Trojan horse program that steals passwords. Trojan horses can also, by remotely controlling a computer, perform denial of service attacks.

## **How to Guard Against Intrusion**

Federal law prohibits the purposeful alteration, modification or falsification of information stored in NIH computer systems. Although these break-in activities are strictly illegal, legal actions can never restore critical information that has been lost. Protection of NIH computer resources is everyone’s responsibility.

The following basic steps can help guard against illegal intrusion:

- Create good passwords. (See the online guidance at [http://irm.cit.nih.gov/security/pwd\\_guidelines.html](http://irm.cit.nih.gov/security/pwd_guidelines.html).)
- Guard your passwords and change them regularly.
- Never e-mail unencrypted passwords over the network.
- Be alert to suspicious computer operations and report them immediately to your supervisor.

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Computer viruses pose a substantial threat to computer system integrity. Viruses are programs that can “infect” other programs, damage hard drives, erase critical information, and take critical systems off-line. Symptoms of an infected system include:

- unusual items appearing on the display, including graphics, odd messages, or system error messages
- corrupted or inaccessible program files, hard disks, or diskettes
- programs taking longer to start up, running more slowly than usual, or not running at all
- unexplained decreases in the amount of available system memory

### Take Steps to Protect Against Viruses – Now

Once symptoms of infection appear, it may be too late to save your information. The following steps will help users protect against viruses:

- Do **not** open e-mail attachments unless you know the sender and are expecting the attachment.
- Do **not** use pirated, hacked, or otherwise illegal copies of programs.
- Do **not** run programs obtained from unfamiliar Bulletin Board systems or from the Internet without first scanning for viruses.
- Make sure you log off or lock your system when you leave your desk.
- Back up your files frequently in case you need to restore corrupted information.
- Use antivirus software to scan for viruses on **all** new software – including an “off-the-shelf” product – prior to installing it onto your system.

NIH has site-licensed antivirus software downloadable from the Web [<http://antivirus.nih.gov>]. For information, consult your institute or center’s help desk, Information System Security Officer (ISSO), or TASC.



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# NIH Data Warehouse—More Help with Year-End Processing

## Year-End Tasks and DWQuery

Now that year-end processing is underway, you can find help from the NIH Data Warehouse (DW). DW's Budget and Finance links to "Year-End Processing" and "Procurements" contain many useful and convenient reports designed specifically for year-end tasks. These reports are available to Budget and Finance, and Procurement users by simply selecting those business areas on the NIH Data Town Web page—and launching DWQuery.

- **Budget and Finance**  
"Year-End Processing" provides reports that offer detailed information on commitments, obligations, accruals, and disbursements for fiscal year 2001 (by CAN, allowance, cost center and document number). Accounting transaction information can be obtained from the "Unconditional Gift Fund Allowance" report and the "12" report. In addition, this activity contains a "Balance of Accounts" report for FY 01, as well as "Current Open Document" reports for commitments and unliquidated obligations.
- **Procurements**  
This business area offers reports for year-end processing—such as queries that list unpaid procurements (by CAN, purchasing agent, purchase order number, requestor and dollar amount). Procurements also has a variety of search reports that provide information on the status of your purchases. With this information, you can monitor commitments and get unpaid procurements money returned to your CAN in this fiscal year.

## Updated ADB Web Purchase Card Log System Will Obligate Purchase Card Log Entries

The Administrative Data Base (ADB) Web Purchase Card Log system has been enhanced to allow users to obligate purchase card log entries. Now available for use—just in time for year-end reporting—the updated ADB Web Purchase Card Log is the only automated NIH purchase card system that offers this extremely useful feature. When you complete the Purchase Card Log entry screen, your log entry is automatically recorded as an obligation in the NIH Central Accounting System (CAS). For purchases entered into the ADB Purchase Card Log, you will no longer need to go through the tedious process of entering year-end purchase card pre-obligations into the ADB. Moreover, the DW Government Purchase Card reports system offers convenient, up-to-date purchase-card reports that will display all of the obligations that you entered into the ADB.

A Web Purchase Card Log Procedures Manual (for the NIH ADB system) is available for users who would like step-by-step instructions on how to use this system. This manual includes information on

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how to log on to the system, enter purchase card log entries, reconcile and review purchases, access the Data Warehouse purchase card reports, and view and print Data Warehouse purchase card reports.

To request a copy of the Procedures Manual or if you have questions about this system, please contact TASC.

### **“Fellowship Payment” – Newest Addition to Human Resources**

Finally, you can get a broad array of reports on fellowship pay in one place. The new “Fellowship Payment” within Human Resources provides comprehensive demographic, status and pay information on fellows. These reports offer detailed information about fellows at NIH, including obligations, monthly pay, stipend changes, fellow movement tracking, demographics, and administrative activity.

“Fellowship Payment” offers integrated information from the Fellowship Payment System II (FPS II) of ADB. The reports in this area allow you to manage your fellowship costs, monitor work authorization and award renewals, identify transfers between nodes, IC's or training programs, and identify award over or under payment amounts at the time of termination.

Please note: you must register separately for this activity before you can view the Fellowship Payment reports and data.

### **Technology Transfer Business Area Is Now Available**

Do you need complete and current information on inventions, licenses, and patents owned by NIH? Do you want this information to be at your fingertips all of the time? Welcome to the NIH Data Warehouse's newest business area, Technology Transfer.

Technology Transfer reports assist in tracking and monitoring the progress of inventions as they move through the license and patent process, identifying maintenance payment schedules associated with specific IC's patents, and reviewing Work Order status and invoice amounts. In addition, a variety of search reports allow users to access technology transfer information based on the e-number, case number, patent number, invention title, or research type.

The sole source for data in the Technology Transfer business area is the Invention Tracking System (ITS) operated by the NIH Office of Technology Transfer. Data for the current year (plus up to ten years) is available for inventors, inventions, licenses, patents and work orders.

### **More Information**

Additional information on these enhancements – or any future plans and releases – may be found in “DW News,” a link from most Data Warehouse Web pages [<http://datatown.nih.gov>]. If you have any questions or concerns, please contact TASC.



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## NBARS “Notifier”—A Handy Way to Confirm Success of Backups on PCs

Do you back up department servers or your workstation via the NIH Backup and Recovery Service (NBARS)? Do you remember to review the log files or NT event log regularly to verify the success of the backup? No? Don’t worry!

The NBARS support team has developed a program, “Backup Status Notifier,” for the Tivoli Storage Manager (successor to ADSTM). The “Notifier” will automatically monitor your latest scheduled backup, then report the results to you. In the convenient Notifier dialog box, you will learn if the backup operation has gone well and if all your expected files were backed up properly.

### Downloading from the Web

PC users can quickly download the Notifier from the NBARS Web site [<http://silk.nih.gov/silk/nbars>]—use the link to “Client Software.” The download is simple and quick. Installation instructions appear on the same Web page.

### Using the Notifier

Once this program is installed and running on your workstation, when you open the “Backup Status Notifier,” a window will appear with these selections:

- |                 |   |
|-----------------|---|
| <b>Reset</b>    | 1) allows you to choose the time and frequency of notification<br>2) lets you have email automatically sent to an administrator when a backup fails |
| <b>Minimize</b> | allows you to close the window but keep the program active  |
| <b>Review</b>   | provides a list of the seven most recent backups<br>Double click on any session for complete details.   |
| <b>Cancel</b>   | closes the Notifier   |

If a backup fails, the Notifier program will alert you and will enable you to display the details of the failed session from the DSMERROR.LOG. This information is very helpful in determining what the problem may be.

### Assistance

If you have questions or have trouble installing the Notifier, please call TASC.



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## CIT Staff to Participate in the NIH Research Festival in October

CIT staff will once again take part in the annual NIH Research Festival to be held in the Natcher Conference Center from October 2 through October 5, 2001. An event that has been showcasing intramural research programs for 15 years, the Research Festival this year has a full schedule of symposia, workshops, and poster sessions.

### Look for the CIT Booth in the Main Lobby

- Staff from the Division of Computer System Services (DCSS) will be on hand to share information about application hosting facilities on the OS/390, UNIX, and Windows NT/Windows 2000 platforms.
- The Helix staff (SOSB, DCSS) is looking forward to welcoming visitors at their booth in the scientific poster display area. Guests will be treated to a multi-media presentation featuring the many scientific applications and services that the Helix Systems offer to the NIH community. Among the topics to be highlighted are bioinformatics, structural biology, mathematical-, graphical- and image analysis, and high-performance parallel program development. The group will also be demonstrating their web-based services, including scientific literature searching, and sequence analysis tools.
- Five scientists from the Division of Computational Bioscience (DCB) have submitted scientific posters for display at the festival. The titles submitted include:
  - *Catalytic Mechanism of N-Acetyltransferase Studied by the Combined Potentials of Quantum Mechanics and Molecular Mechanics*
  - *Medical Image Processing, Analysis, and Visualization in Clinical Research*
  - *Net Charge of the First 18 Residues of the Mature Sequence Affects Protein Translocation Across the Cytoplasmic Membrane of Gram-Negative Bacteria*
  - *Software Tools for Biomolecular Structure Determination*
  - *FSCAN – An Open Source Program for Analysis of Two-Color Fluorescence-Labeled cDNA Microarrays*
  - *NCI/CIT MicroArray Database (mAdb) System – Bioinformatics for Microarrays*
  - *Proximal Positioning of Translocated and Normal Chromosomes in the Interphase Nucleus*
- The CIT Office of Planning, Evaluation, and Communications (OPEC) is coordinating CIT's participation and will distribute informational materials at the CIT booth.

This year's festival is co-chaired by Dr. Peter Lipsky, NIAMS, and Dr. J. Carl Barrett, NCI, and coordinated by Paula Cohen from the NIH Special Events Office. You are welcome to send her an e-mail at [pc68v@nih.gov](mailto:pc68v@nih.gov). For up-to-date information, visit the NIH Research Festival 2001 Web page [<http://festival01.nih.gov>].



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# The North System Transition to Titan Was Completed on July 31

CIT has carefully planned for the transition from our two distinct OS/390 systems into a third system—Titan—that is easier and less expensive to maintain, and can be more quickly adapted to changes in technology. The first major step—the transition of applications from the North system to Titan—was completed at midnight, July 31.

The OS/390 (MVS) operating system is an extremely complex and critical system. Bringing a new system, Titan, into production and then moving applications from the North system to Titan—while maintaining the availability of computing services required by NIH, DHHS and 25 other federal agencies—was a formidable accomplishment. Reliability of CIT computing facilities is crucial for the agencies that depend upon the OS/390 system for critical aspects of their missions. An interruption in the availability of Titan could result in a cost to the government of many millions of dollars. The relatively smooth transition was a testament to the years of planning by the CIT staff.

## **Titan System Information**

Prior to July 31, most North customers had already successfully moved their applications to Titan. On August 1, the remaining customers still using the North system were redirected to Titan. Although a few problems did occur, the Titan transition staff was quick to diagnose the causes and to resolve them. Customers were promptly informed about problems, events and issues relating to the North shutdown and transition to Titan via a “System Status” Web page [<http://silk.nih.gov/mvs/north.info>]. This page was updated regularly while outstanding North transition issues remained. We have received very positive feedback about the timeliness and usefulness of this page.

For help in identifying differences between Titan and the North system, please visit the Titan Information Web site [<http://silk.nih.gov/silk/titan>].

If you have questions or problems, please contact TASC and ask to speak to a Titan consultant.

## **South Transition**

The next major step will be the transition of applications from the South system to Titan. Current projections are that the South migration will be completed by the end of calendar year 2003.



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## New IBM Processors at NIH Computer Center Will Speed Computing

CIT has just installed two IBM 9672-RB6 processors at the NIH Computer Center. To minimize outage to ongoing work, CIT installed, configured, tested, and put these processors into service on Sundays—August 19 and 26.

Based on complementary metal oxide semiconductor (CMOS) technology, each machine is configured with two processors—each capable of approximately 83 million instructions per second (MIPS). Thus, each machine (with two processors) is capable of 166 MIPS, or a total of 332 MIPS.

### **Warning—Have You Checked Your Vendor Software ?**

Information on the installation of the new processors was e-mailed in advance to users via the Web-based "Titan / South System News." [<http://datacenter.cit.nih.gov/titannews/index.html>]. However, if you haven't already verified that software from a vendor will run on the new processors, you should do so as soon as possible.

Many vendor-supplied applications have software checks to verify licensing restrictions. These applications may check what type (model number) of CPU the application is running on and/or check actual serial numbers of the CPU.

If you are running an application purchased from a vendor, you should check with your vendor to see if the software checks CPU serial numbers or model numbers. If so, you may need to make a change to your application to ensure it will continue to run on the new processors. Since the installation, only the new serial numbers and new model numbers are used.

- **New model number is**

9672-RB6

Old model number was 9672-R44.

- **The new IBM 9672-RB6 serial numbers are**

CP0=044625    CP1=144625  
CP0=044626    CP1=144626

The old IBM 9672-R44 serial numbers were:

CP0=044625, CP1=144625, CP2=244625, CP3=344625  
CP0=044626, CP1=144626, CP2=244626, CP3=344626



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## Benefits – Immediate and Long Term

Together, these new machines will provide more computing power – a doubling of processor memory and an increase in individual processor speed – with greatly reduced environmental requirements. Applications that are data intensive or do not lend themselves to multitasking will experience the most improvement in performance.

The 9672 CMOS machines occupy the same amount of floor space as the older IBM 9672-R44 machines. However, energy consumption will be reduced – both power for operating the machines and cooling capacity for dispersing the heat generated. Over the longer term, we expect that these new machines will be extremely reliable and easily upgraded, as CIT continues to meet the needs of our customers.



## Titan—Users Can Download TCP/IP Clients for PCs from the Web

CIT has for some time made TCP/IP clients available to PC users via the Web. Now registered Titan users can also download QWS3270 Plus and WS\_FTP Pro from the Web. **Note:** NetTerm will not be distributed to Titan users, since there is no line-mode telnet access to Titan.

- **QWS3270 Plus** is an application that allows a network-attached PC running Windows to connect to an IBM mainframe in full screen, 3270 mode (TN3270). CIT has recommended and distributed the software – designed to take full advantage of the point-and-click capabilities of Windows – since 1997.
- **WS\_FTP Pro** – based on the file transfer protocol (FTP) – provides fast and accurate transfer of files or collections of files between Internet-connected computers using Windows 95/98/NT. WS\_FTP Pro has been customized with preconfigured sessions for the major NIH computer systems. We recommend that you use the classic interface, which gives the best display of file names and will allow you to use the QUOTE and SITE commands.

### How to Download the Clients

Just go to the CIT Software Distribution Project Web page [<http://sdp.cit.nih.gov>], click first on “NIH TCP Tools” and then on “OS/390 Titan.”

You will need to enter your Titan system userid and RACF password to download this software. If you need help, please call TASC.



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## Enhanced Automation May Enable Quality Service *and* Unattended Service on Sundays

After considerable study, CIT is pursuing streamlining operator coverage in the NIH Computer Center. In late October, we will begin a pilot program using enhanced hardware and system software monitoring to ensure full 7x24 reliability. During the pilot, operations staff will not be physically present on Sundays.

CIT has focused a lot of its attention over the past several years on enhancing reliability, as have computer centers around the country. The installation of an uninterruptible power supply (UPS) for the computer room has insulated the facility from power fluctuations—the most common problem in our environment. We have installed sophisticated monitoring software on all systems to provide rapid warning of problems with both hardware and software. In addition, the hardware we have installed in the last few years has proven to be much more reliable than the equipment it replaced.

In recent years, CIT has made significant investments in automation on the OS/390 system, including automatic handling of routine console messages and a Virtual Tape System. This automation has significantly reduced the requirement for “hands-on” operational support, enabling CIT to retrain many staff members in other technologies. At the same time, we have seen changes in the requirements of our customers, including a marked reduction in the amount of weekend printing on our large central printers. These user changes now make it feasible to improve operational efficiencies while maintaining the same level of service.

Naturally, we will be observing the results of the pilot very closely. If we see indications that our service to you is being degraded, we will return to providing operator coverage on Sundays. If, as we expect, there is no detectable effect on our services, we will make unattended operations on Sundays standard and supply operator coverage only when it is needed.

As the time for the pilot program nears, we will inform you of the effective date through the South system and Titan “messages of the day.” As always, we look forward to being able to provide ongoing high quality service that satisfies the changing needs of our customers.



## A New E-Mail List Keeps OS/390 Users Informed

A new way of providing timely information specifically for OS/390 (MVS) users — “Titan / South System News” — was initiated on August 10. This enables us to provide detailed information to people directly involved. The CIT periodical, *Interface*, contains information concerning services and facilities provided

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by CIT to NIH and other government agencies, and will continue to publish articles of general interest on the OS/390 system.

We will use “Titan / South System News” as our primary means of communicating technical information to OS/390 users, which will enable us to distribute information at short notice – that is, important news or updates on outages. This means that you will be kept well-informed about events, equipment and software upgrades, technical information and other issues.

The inaugural “Titan / South System News” was sent by e-mail via a new Listserv list, “CIT-Titan-South.” We encourage you to remain on this new Titan list if you have applications that depend upon the use of the OS/390 systems. However, if you wish to leave the list (but continue receiving *Interface*), please use NIH Listserv [<http://list.nih.gov/archives/cit-titan-news.html>] to unsubscribe.

If you did **not** receive the e-mail on August 10, be sure to join the “CIT-Titan-News” list [<http://list.nih.gov/archives/cit-titan-news.html>] to ensure getting future e-mails. You can read “Titan / South System News” on the Web [<http://datacenter.cit.nih.gov/titannews>].



## Changes to CIT's Web-Based Service Request Ticket System

Beginning September 17, 2001, users of the Service Request Ticket (SRT) system [<http://datacenter.cit.nih.gov/srt>] will find tickets easier to submit and track. SRT is a Web-based system used for reporting problems, communicating suggestions and requesting refunds relating to the OS/390 systems. The improvements include:

- **Direct interface to Remedy database**

You will no longer have to supply your name, email address, or phone number – these values will be automatically inserted into the request.

- **Automatic ticket number**

You will receive the ticket number when you submit a request – helping you to follow up on the request's status when you contact TASC.

The Web page will also have a new title – OS/390 Service Request Ticket.



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## “Ask TASC”—About Mac OS X

TASC receives many calls each day from customers who experience similar problems. In each issue of *Interface*, we present some frequently asked questions and answers. We hope you find this information helpful.

First, we should set the stage with some technical lingo. Now that Mac operating system OS X (pronounced “ten”) is out, you will hear people talk about Mac OS 9.1, Classic, Carbon and Cocoa.

Knowing the differences will help us give you technical assistance, as well as help you decide what applications to install.

- **Mac OS 9.1** – If your computer is currently using this version, refer to it as “Mac OS 9.1.” This informs the technical support or sales staff that you are not using OS X (either you have not installed it or are currently booted up in the older operating system).

OS 9.1 must be installed prior to installing OS X. So, if you have a version of Mac OS prior to version 9.1, you must first upgrade to 9.1.

- **Classic** – OS X has a built-in “Mac OS 9 Emulator” called Classic. Use this term to indicate that you are talking about an OS 9 application that you are running while booted up in OS X.
- **Carbon** – These applications are able to run on either OS 9 or OS X.
- **Cocoa** – These applications are only able to run on OS X.

### What Is Mac OS X?



Mac OS X is substantially different from Mac OS 9.x—with a different desktop layout, file structure, system layout and configuration. Don’t worry, you will still be able to point, click and drag as always. Check out Mac OS X on the Apple Web pages for more information.

OS X is built on UNIX BSD (Berkeley Software Distribution), with some elements of the NeXT OS and a few things from the older Mac operating system.

Users will interact with the computer using the Finder—which looks quite a bit different than in OS9. You won’t need to learn Unix, although users who want to “look under the hood” should have some Unix knowledge.

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## Do I Need to Upgrade?

As with any upgrade, you need to ask yourself questions such as, “Does this new operating system have something in it that I need to do my work?” “Does this new OS have features that will improve my productivity?” “Will the applications I need run in Classic? If not, is there a Carbon or Cocoa version?” Or, perhaps you’re one of those people who just has to have it.

Our recommendation—ask yourself these types of questions. If the answer is still yes, then first make sure your computer meets at least the minimum requirements before plunging in. You may not be able to run the new OS without some hardware upgrades. Check out Mac OS X on the Apple Web site to find out the requirements for running it on your computer.

At present, there are not yet enough applications for OS X to justify switching to the new OS. Plenty of applications should be available by the end of 2001, but many will probably require you to procure an upgrade to run on OS X.

## How to Get Mac OS X

To get Mac OS X, contact your institute or center’s Software Distribution Project (SDP) representative or call your help desk. Your SDP contact is listed on the CIT SDP Web page [<http://sdp.cit.nih.gov/lookup/>]. Or call the CIT help desk, TASC.

After you have installed Mac OS X you may need minor updates to some of its components. For most updates, you should simply use the Software Update feature found in the “Mac OS X System Preferences.” For updates to Mac OS 9.1, use its “Software Update” control panel.

Apple has just announced plans to ship Mac OS X (version 10.1) in September. This latest version—also available from your SDP contact—will sport more Finder enhancements and speed improvements. This is not an update but rather an “upgrade”—which means that you will need to install it (just as you would any other release of the OS) from the Mac OS 10.1 Installer.

## Mac OS X Installation

There are essentially three ways to install OS X:

1. Install it on the same hard drive that you have OS 9.1.  
This is probably the easiest and recommended method for most users.
2. Install it on a second hard drive.
3. Install it on a different “partition” on the hard drive where you have OS 9.1. This is more complicated, and you will need to reformat your hard drive:

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- a. Back up all your data and make a list of the applications you want to reinstall.
  - b. Format the hard drive into at least two partitions, **one for OS 9.1** and **one for OS X**.
    - Drive Setup will be needed to accomplish this. (If you use another disk formatting program, be sure it is compatible with Mac OS X. It also needs to support the HFS Plus format).
    - You will need to create the first partition to be less than 8Mb (that is, 7,999,999 bytes), and install OS X on this first partition. OS X won't install on the other partition, or if it is 8,000,000 bytes or larger.
  - c. Install Mac OS 9.1 on the second partition. We recommend that you also install the Developer Tools from the companion CD that comes with OS X, since it will improve the speed of OS X. The Developer Tools Installer should install the tools on the OS X partition.
  - d. Reinstall all of your applications on the OS 9.1 partition, since they probably are not OS X applications.
  - e. Restore your data files.

## How Can I Find Mac OS X Versions of My Applications?

The quickest way is to check the application manufacturer's Web site. Here are good Web sites to check out for late breaking news:

Apple's Mac OS X Web site  
MacNN's OS X Web site  
Version Tracker Web site

Probably one of the most awaited application suites is Microsoft Office 10, due out later this fall. You may want to check the Microsoft Web site for the latest info  
[[http://www.microsoft.com/mac/products/office/10/office10\\_default.asp](http://www.microsoft.com/mac/products/office/10/office10_default.asp)].

We do not recommend using "beta" or unreleased versions of software.

## Where Do I Get Training?

The CIT Training Program plans to offer a Mac OS X class for beginners in the fall term. Courses for the fall term will be listed on the training Web site [<http://training.cit.nih.gov/>] beginning on September 20.

If you would like further information or need assistance, please call TASC.



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## CIT Computer Training—Classes Still to Come in Summer Term

Many interesting classes are still available in the CIT Training Program before the term ends in September. In addition, many opportunities exist for studying outside of an instructor-led class.

### Independent Study

You can study computing topics from your desk or home via our Self Study Library, which contains close to 500 books on an array of subjects. Many new books added recently include Microsoft Office for Windows and Mac, Java programming, and the Unix operating system.

- **Self Study Library**

*Titles available*—A representative list of titles is posted on the training Web page at [<http://training.cit.nih.gov>]—use the link, “Independent Study Courses.”

*Obtaining a book*—You can either call TASC to see if the book or a similar one is available or stop by TASC (building 12A, room 1011).

*Check out time*—The period is two weeks, extendable for two additional weeks if no one is waiting for the book.

If you want a topic that does not seem to be available, please let us know. We continually refresh titles in the Self Study Library.

- **FasTrac**

Independent study opportunities are considerable via the FasTrac program. For only \$60 (over 12 months), you can get an ID that offers access to over 1000 online courses. This low price is available because of a large purchase across many government agencies. More information on how to take advantage of it is available via the FasTrac link on the training Web page.

### Classroom Instruction

“Titan Account Sponsor Orientation” will help account sponsors navigate hurdles encountered with the move to the Titan system. Come prepared with questions —this is an opportunity to get answers.

If you are already using the NIH Portal and would like to customize it for your own use or create a module for others to use, you can take “Developing Modules for the NIH Portal Using Active Server Pages.” Charles Mokotoff will teach this new class on September 12.

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Interesting courses in database training include, “Using Microsoft SQL 2000 in Data Mining,” taught by Dr. Augie Turano of Microsoft. The last session of this course generated a lively interchange of questions and suggestions – so please consider coming to learn about the topic *and* contribute to the conversation. A new class in September, “Oracle SQL Plus,” will teach how to manipulate SQL commands and perform additional tasks using Oracle’s command-line processor.

To understand more about hardware, sign up for “Meet Your PC – What’s Inside the Box.” The instructor will disassemble a computer and briefly discuss the functions of the various components and how they work together. “Introduction to Wireless Communications” will cover wireless networking at NIH.

A new Data Warehouse offering on using the tool in end-of-year processing has generated substantial interest. New sections are being opened as others fill, so please sign up if this would be helpful to you.

In the fall term, the training program will have more new courses—including a full-day course taught by MathWorks (maker of MATLAB and Simulink). The training Web page will post the full list—with course descriptions—beginning on September 20.

## **Registration**

As always, classes are available free of charge to NIH employees and other users of NIH computing facilities. The courses are offered to help individuals become more efficient and effective in using computing, networking, and information systems. You can obtain full course information or register for classes via the training Web page [<http://training.cit.nih.gov>].

You are always welcome to give TASC a call to discuss course registration or other training issues, as well as to volunteer to teach a class.





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## Training Calendar—Summer 2001 (Update)

On September 20, the full list of fall classes with course descriptions will be online [<http://training.cit.nih.gov>].

### September

805	Hands-On Windows 2000 Server for System Administrators	9/5
193B	NIH Data Warehouse <i>Query</i> : Human Resources	9/5
706	Titan Account Sponsor Orientation	9/6
184	NIH Data Warehouse <i>Query</i> : Procurement & Market Requisitions	9/6
855	Microsoft Project 2000 Overview	9/7
337	Oracle SQL Plus	9/7
160C	Budget Tracking	9/11
653	Developing Modules for the NIH Portal Using ASP	9/12
310	Using Microsoft SQL 2000 for Data Mining	9/12
180C	NIH Data Warehouse <i>Query</i> : Budget & Finance	9/13
163C	NIH Data Warehouse End-of-Year Processing	9/14
636	Introduction to FrontPage 2000	9/25
877	BRMUG - Macintosh Users Group	9/25
346	KMIG - Knowledge Management Interest Group	9/26
381	Building Cisco Multilayered Switched Networks	9/25 - 9/28

### October

400A	Fundamentals of Unix	10/2 - 10/4
831A	Outlook 2000 Tips and Tricks	10/4
675	WIG - World Wide Web Interest Group	10/9
409	Basic Security for Unix Workstations	10/11
212	SAS Programming Fundamentals I	10/16 - 10/17
373	LISTSERV Electronic Mailing Lists: Hands-On Workshop for General Users	10/17
374	LISTSERV Electronic Mailing Lists: Hands-On Workshop for for General Users	10/18
718	Disaster Recovery	10/18
213	SAS Programming Fundamentals II	10/22 - 10/23
547	C Language	10/22 - 10/31
877	BRMUG - Macintosh Users Group	10/23
375	Hubs, Switches, and Routers	10/24
357	The NIH Intranet Web Portal: An Overview of Technology and Content	10/25
903	Avoiding Pitfalls in Statistical Analysis	10/26
301	Relational Database Overview	10/30
704	FasTrac Overview	10/31



# Dates to Remember

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## Now . . .

- TASC now provides technical support to users of NIH telephone service. [See issue 219]
- Help with “508” accessibility is available at CIT, NCI and NLM. [See also issue 219]
- NIH portal provides access to NIH information from a single Web page. [See issue 219]
- The NIH Business System has a new name – NBRSS. [See issue 219]
- Transition to Titan has been successfully completed. <sup>T N</sup>
- A six-character minimum for passwords is being enforced. <sup>S T</sup> [See issue 219]
- Two new processors are now production at NIH Computer Center. <sup>S T</sup>
- *Interface* subscribers now receive online publication, *Interface Online*.

## Software Available

- Antivirus management tool—ePolicy Orchestrator—is available for network administrators and security officers.
- NBARS now has offers a “Notifier” that shows results of backups.
- The Software Distribution Project has a licensing agreement with Adobe. [See issue 219]

## Soon . . .

September 17	Enhancements to SRT system will take effect
October 1	“Off-hours” discount will be reduced in fiscal year 2002 <sup>S</sup> [See issue 218]
October 1	Prices for processing microfiche will change. <sup>S T</sup>
October 2-5	NIH Research Festival will be held in Natcher.
Late October	Unattended service on Sundays will begin. <sup>S T E</sup>
November 2	Disaster recovery test at hot site. <sup>S T E</sup> [See issue 218]

S	OS/390 South System
N	OS/390 North System (turned off July 31, 2001)
T	OS/390 Titan System
E	Enterprise Open System

Articles in other issues of *Interface* appear in brackets [ ].



# Rates for Fiscal Year 2002

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The rates for CIT services for fiscal year 2002 are effective October 1, 2001. Changes in rates (e.g., increases, decreases) from FY01 — as well as new charges — are noted to the right of the FY02 rate.

We have recently undertaken a study to ensure that our rates directly reflect our costs for providing each major service. These rates are a result of this reassessment. In addition, we have made an effort to simplify our rate structure—an effort that will continue as we merge the South system into Titan.

The overall charges to users in FY02 will be comparable to those in FY01.

	<i>FY 2002 Rate</i>	<i>Change</i>
<b>SOUTH SYSTEM (OS/390)</b>		
Processing		
WYLBUR editing (per 9672G3 CPU second) <sup>1</sup>	\$ .33	
TSO CPU time (per 9672G3 CPU second) <sup>1</sup>	\$ .30	
Batch	See equation <sup>2</sup>	
Minimum charge (per batch job)	\$ .25	
IMS (per ENTER keystroke)	\$ .05	
Tape		
Library storage (per tape-month)	\$ 1.00	
Library removal (per tape)	\$ 15.00	
Disk storage (per MB-day)	\$ .011	
Printing (per 1,000 lines)	\$ 1.00	
Microfiche		
Each original	\$ 2.00	+ \$ .40
Each duplicate	\$ .25	
Minimum charge per job	\$ 2.50	
Connect time (logon time)		
Wylbur (per hour)	\$ 1.00	
TSO (per hour)	\$ .90	

1 The rates (i.e., charges) for CPU time are based on a previous, slower processor model (9672 Generation 3). Since the current Generation 5 processors are twice as fast as the older ones (i.e., provide twice as much processing per second), the processing time shown on job output is multiplied by two before applying the CPU time rate. The \$ figure on output is the approximate charge.

2 The South system batch charge is computed in the following way:

$$\text{Cost} = 0.64 * C * (.00002 * R + 1) + .00017 * I + M * T$$

- C = CPU time used in 9672G3 seconds <sup>1</sup>
- R = region used up to 1536K
- I = I/O used
- M = tape mount factor = 4.7619 for **non-discount** jobs
- M = tape mount factor = 11.90475 for **discount** jobs
- T = number of assigned tapes and special tapes mounted

	<i>FY 2002 Rate</i>	<i>Change</i>
<b>Remote Job Entry</b>		
Setup fee for new RJE	\$ 100.00	
Dedicated line (per month)	CIT cost pass thru	
Switched line (per hour)	\$ 5.00	
<b>Discounts</b>		
Interactive and batch processing		
Workday sessions that start after 5:00 P.M. and end before 7:00 A.M.	50% discount	- 10%
All sessions that occur entirely on weekends	50% discount	- 10%
<b>DB2 Processing</b>		
0+ to 10 CPU seconds (per 9672G3 CPU second) <sup>1</sup>	\$ .60	
11 to 25 CPU seconds (per 9672G3 CPU second) <sup>1</sup>	\$ .44	
26 to 200 CPU seconds (per 9672G3 CPU second) <sup>1</sup>	\$ .20	
Over 200 CPU seconds (per 9672G3 CPU second) <sup>1</sup>	\$ .10	
<b>TITAN SYSTEM (OS/390)</b>		
Processing		
Batch CPU (per 9672G3 CPU second) <sup>1</sup>	\$ .90	New
Batch I/O (SIO) (per 1,000)	\$ .15	New
Interactive CPU (per 9672G3 CPU second) <sup>1</sup>	\$ 1.04	New
Interactive I/O (SIO) (per 1,000)	\$ .15	New
Disk storage (per MB-day)	\$ .045 <sup>3</sup>	New
Tape		
Tape mount	\$ .50	New
Library storage (per tape-day)	\$ .03	New
Printing		
Standard (per page)	\$ .06	New
Labels (per 1,000 lines)	\$ 1.15	New
Microfiche		
Each original	\$ 2.00	New
Each duplicate	\$ .25	New
Minimum charge per job	\$ 2.50	New
<b>Remote Job Entry</b>		
Setup fee for new RJE	\$ 100.00	New
Dedicated line (per month)	CIT cost pass thru	New
<b>Discounts</b>		
Interactive and batch processing		
Workday sessions that start after 5:00 P.M. and end before 7:00 A.M.	50% discount	New
All sessions that occur entirely on weekends	50% discount	New

Model 204 and ADABAS charged by CPU usage and I/O at either batch or interactive rate, as appropriate.

<sup>3</sup> Disk storage rates will be significantly reduced within FY2002 as part of transition to Titan.

	<i>FY 2002 Rate</i>	<i>Change</i>
<b>SCIENTIFIC SYSTEMS</b>		
<b>Advanced Laboratory Workstation</b>		
User fee (per month)	\$ 22.00	
Disk storage (per MB-day)	\$ .0033	- \$ .0067
Machine fee (per month)	\$ 150.00	
<b>Helix Services</b>		
Helix user subscription fee (per month)	\$ 20.00	+ \$ 1.00
Disk storage (per MB-day)	\$ .0033	- \$ .0067
<b>MICROSOFT WINDOWS SERVICES</b>		
<p>Server fees encompass hosting services only and do not include server hardware costs.  Hardware requirements are addressed on a per customer basis to best meet customer needs.  <b>All charges are monthly unless otherwise noted.</b></p>		
<b>Server Fees</b>		
Dedicated Server		
Service - excludes hardware	\$ 1,325.00	- \$ 258.33
Storage - based on customer requirements		
Shared Server		
Service - includes 50 GB storage	\$ 584.00	New
<b>Application Hosting Fees</b>		
Setup fee for any application (one-time charge)	\$ 200.00	
Web hosting (per IIS site)	\$ 100.00	
Print service (annually, per queue, no server charge)	\$ 150.00	New
<b>MS SQL Services on Dedicated Server</b>		
First application DB (setup charge)	\$ 722.00	
First application DB	\$ 814.00	- \$ 381.67
Each additional application DB (setup charge)	\$ 181.00	
Each additional application DB	\$ 210.00	
<b>MS SQL Services on Shared Server</b>		
Setup charge (per database)	\$ 181.00	
Monthly charge (per database)	\$ 210.00	New
Disk storage, each 2 GB	\$ 30.00	New

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## MISCELLANEOUS SERVICES

### Firewall Services for Applications

Setup charge	\$ 9,200.00
Annual maintenance	\$ 1,400.00

### ADSM (NBARS)

Storage (per file per month)	\$ .00075
Transfer	
First GB	\$ 15.00
Each GB thereafter	\$ 7.50
Minimum transfer	\$ 3.00

### SILK Web

Basic (storage=10MB, traffic=500MB)	
Server charge (per month)	\$ 60.00
Password protection (per month)	\$ 10.00
Secure sockets layer (SSL) (per month)	\$ 20.00

Intermediate (storage=25MB, traffic=1000MB)	
Server charge (per month)	\$ 110.00
Password protection (per month)	\$ 15.00
Secure sockets layer (SSL) (per month)	\$ 35.00

Advanced (storage=50MB, traffic=2000MB)	
Server charge (per month)	\$ 200.00
Password protection (per month)	\$ 20.00
Secure sockets layer (SSL) (per month)	\$ 50.00

### Central Printing (LAN Initiated)

Per page	\$ .06	New
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# Popular Web Sites

Service	Web Address
<b>National Institutes of Health</b>	<a href="http://www.nih.gov">http://www.nih.gov</a>
Antivirus Web site	<a href="http://antivirus.nih.gov">http://antivirus.nih.gov</a>
NIH Electronic Directory	<a href="http://nedinfo.nih.gov">http://nedinfo.nih.gov</a>
NIH Data Warehouse	<a href="http://datatown.nih.gov">http://datatown.nih.gov</a>
Software Distribution Project	<a href="http://sdp.cit.nih.gov">http://sdp.cit.nih.gov</a>
<b>Center for Information Technology</b>	<a href="http://cit.nih.gov">http://cit.nih.gov</a>
Computational Bioscience	
Molecular Modeling	<a href="http://cmm.info.nih.gov/modeling">http://cmm.info.nih.gov/modeling</a>
NIH Computer Center Systems	<a href="http://datacenter.cit.nih.gov">http://datacenter.cit.nih.gov</a>
ALW	<a href="http://www.alw.nih.gov">http://www.alw.nih.gov</a>
Helix Systems	<a href="http://helix.nih.gov">http://helix.nih.gov</a>
Account Information	<a href="http://helix.nih.gov/new_users/account.html">http://helix.nih.gov/new_users/account.html</a>
NIH Biowulf Cluster	<a href="http://biowulf.nih.gov">http://biowulf.nih.gov</a>
Enterprise Systems	<a href="http://datacenter.cit.nih.gov/enterprise.html">http://datacenter.cit.nih.gov/enterprise.html</a>
<i>OS/390 Titan</i>	<a href="http://titan.nih.gov/">http://titan.nih.gov/</a>
Transition Update	<a href="http://silk.nih.gov/silk/titan">http://silk.nih.gov/silk/titan</a>
<i>OS/390 South</i>	<a href="http://datacenter.cit.nih.gov/mvs">http://datacenter.cit.nih.gov/mvs</a>
Database Technologies	<a href="http://silk.nih.gov/dbtech">http://silk.nih.gov/dbtech</a>
Problem Reporting	<a href="http://datacenter.cit.nih.gov/srt">http://datacenter.cit.nih.gov/srt</a>
RACF	<a href="http://silk.nih.gov/racf">http://silk.nih.gov/racf</a>
SILK Web	<a href="http://silk.nih.gov">http://silk.nih.gov</a>
Web Sponsor	<a href="http://silk.nih.gov/sponsor/homepage">http://silk.nih.gov/sponsor/homepage</a>
<i>Enterprise Open System (EOS)</i>	<a href="http://datacenter.cit.nih.gov/eos">http://datacenter.cit.nih.gov/eos</a>
<i>NT Applications Servers</i>	<a href="http://datacenter.cit.nih.gov/nt">http://datacenter.cit.nih.gov/nt</a>
NIH Backup and Recovery Service	<a href="http://silk.nih.gov/silk/nbars">http://silk.nih.gov/silk/nbars</a>
Oracle License Information	<a href="http://silk.nih.gov/silk/oracle">http://silk.nih.gov/silk/oracle</a>
Oracle Database Servers	<a href="http://silk.nih.gov/silk/citoracle">http://silk.nih.gov/silk/citoracle</a>
<b>Customer Services</b>	
Accounts	<a href="http://support.cit.nih.gov/accounts/">http://support.cit.nih.gov/accounts/</a>
Computer Training	<a href="http://training.cit.nih.gov">http://training.cit.nih.gov</a>
Publications	<a href="http://publications.cit.nih.gov">http://publications.cit.nih.gov</a>
TASC	<a href="http://dcs.cit.nih.gov/tasc/tasc.htm">http://dcs.cit.nih.gov/tasc/tasc.htm</a>
<b>Network Systems</b>	
LISTSERV	<a href="http://list.nih.gov">http://list.nih.gov</a>
NIHnet	<a href="http://www.net.nih.gov">http://www.net.nih.gov</a>
Parachute	<a href="http://parachute.nih.gov">http://parachute.nih.gov</a>

# NIH COMPUTER CENTER Hardware and Software

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## ENTERPRISE SYSTEMS

### OS/390 (MVS) SYSTEMS

#### OS/390 Systems Hardware

The OS/390 facility is an integrated multiprocessor complex, interconnected by shared disk storage. There are two IBM 9672 model RB6 systems, each with 2 processors. Each system has two gigabytes (GB) of memory and a complement of several hundred peripheral devices.

The peripheral devices include:

- ILK 3762 Ethernet interface for TCP/IP
- 9392 disk drives (RAMAC)
- 3480 cartridge tape drives (18 track, 38,000 BPI)
- 3490E cartridge tape drives (36 track, 38,000 BPI)
- 3494 automated tape library (ATL)
- 3422 tape drives (6250/1600 BPI)
- STK 9310 (Powderhorn ) ATL
- STK 9490 (Timberline) cartridge tape drives (36 track, 38,000 BPI)
- STK virtual tape storage subsystem (VTSS)
- STK 9840 ultra high performance magnetic tape drives
- 3990 DASD Cache Storage Controllers
- 9390 DASD Cache Storage Controllers
- 3900 laser printing subsystems
- 3160 cut-sheet laser printers
- 4245 impact printers
- 3172 channel to Ethernet interface
- 3745 communications controllers
- 5665 NCR communications controllers

Peripherals are available to all processors, providing nonidle redundancy and minimal disruption of service in the event of any subsystem or component failure.

#### IBM 9672-RB6 Serial Numbers

CP0=044625, CP1=144625  
CP0=044626, CP1=144626

### OS/390 Systems Software

**S = South System, T =Titan**

#### *OS/390 Operating System*

The IBM OS/390 Operating System using job control language as the user interface and the Job Entry Subsystem Version 2 (JES2), (S, T). A Unix-based component of OS/390 is installed (S, T).

#### *SILK Web Facilities*

Customized, public, and secure servers available for general use. SILK provides online services that include: directory and account information, management functions, RACF processing, data set listing, batch job submission, and e-mail through a Web interface (S, T).

#### *Interactive Systems*

CICS (T), ISPF (S, T), TSO (S, T), NIH Extended WYLBUR (S), and ACS WYLBUR (T)

#### *Databases*

ADABAS (T), Model 204 (T), DB2 (S), and IMS (S)

#### *Language Processors*

COBOL/370 (S, T), VS FORTRAN (S, T), PL/I for OS and VM (S, T), REXX (S, T), High Level Assembler (S, T)

#### *Graphics Systems*

SAS/GRAPH (T)

#### *Scientific Statistical Systems*

SAS (S, T), SPSS (S, T)

#### *Other*

File management systems - VISION:Builder (S, T), VISION:Report (S, T), IRS (T); BookManager online documentation system (T); CONNECT:Direct for online financial transactions (S, T); VPS printing service (S, T)

#### *Connectivity Products for Access to the OS/390 Systems*

Terminal emulation and full connectivity client software for telnet and dialup connections. Supported software packages include MS-Kermit (S), QWS3270 PLUS (S, T), NetTerm (TNVT) (S), and WS\_FTP Pro (S, T).



# NIH COMPUTER CENTER Hardware and Software

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## ENTERPRISE OPEN SYSTEMS (EOS)

### Unix System Hardware

Compaq AlphaServer GS60  
4 CPUs (500 MHz EV6)  
4 GB RAM

Compaq/Digital AlphaServer GS140  
10 CPUs (440 MHz)  
8 GB RAM

Numerous Compaq/Digital AlphaServers: 1000s, 1200s, 2100s, and a 4100

Sun Enterprise 250 and 420-R servers

### Unix System Software

*Tru64 UNIX Operating System*

*Sun Solaris Operating System*

*Installed Software (commercial)*

DEC COBOL  
DEC C  
DEC C++  
Netscape Enterprise Server  
Oracle Web Application Server

*Database*

Oracle

## WINDOWS NT/2000 APPLICATION SERVERS

Windows NT and Windows 2000 applications can be hosted on a series of servers that are carefully managed and monitored by CIT on a 7x24 basis. These are Compaq Enterprise class servers and storage arrays. This facility provides a computing environment that has been proven suitable for mission-critical, enterprise-wide applications.

### Hardware

Compaq DL360  
Dual- Intel Pentium III 800MHz Processors  
512MB SDRAM expandable to 4 GB  
Storage: 2 Internal Drives - 9.1, 18.2, or 36GB - large storage arrays available  
Size: 1U

Compaq DL380  
Dual - Intel Pentium III 933MHz Processors  
512MB SDRAM expandable to 4 GB

Storage: 4 - 6 Internal Drives - 9.1, 18.2, or 36GB - large storage arrays available  
Size: 3U

Compaq DL580  
Quad - Intel Pentium III 700MHz/2MB Xeon Processors  
1GB SDRAM expandable to 16 GB  
Storage: 4 Internal Drives - 9.1, 18.2, or 36GB - large storage arrays available  
Size: 4U

Compaq 8500  
An 8 way (8 processor) - Intel Pentium III 700MHz/2MB Xeon Processors  
2GB SDRAM expandable to 16 GB  
Storage: 4 Internal Drives - 9.1, 18.2, or 36GB - large storage arrays available  
Size: 7U

## Windows Application Software

NT 4.0 Server is our standard operating system, with Windows 2000 service in the near future.

Major components of the Microsoft BackOffice Suite of applications, with services such as Terminal Server, SQL Server, Exchange, and IIS, are supported in an enterprise-wide environment.

Other user specified and support software including:

NBARS—automatic backup/recovery services for distributed file servers

## OTHER SERVICES

Oracle server software for use on several platforms with concurrent Oracle usage rights.

Site license agreements for distributing SAS for PC clients.

Central Email Service (CES) provides e-mail services for the NIH community.

NBARS, an OS/390-based service using TSM software, provides backup and recovery for distributed data.

The Disaster Recovery Program provides disaster recovery facilities and services for "critical" applications that run on the OS/390 systems and the EOS system.

# NIH COMPUTER CENTER Hardware and Software

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## HELIX SYSTEMS

<http://helix.nih.gov>

The NIH Helix Systems manage high-performance computing systems for the NIH intramural scientific community. The staff provides training, documentation and consulting for the resources on these systems. The front-end SGI Origin 2000 system (with the network name [helix.nih.gov](http://helix.nih.gov)) is used for many scientific applications as well as general purpose tasks, such as reading mail, transferring files and web browsing.

Additional systems offer special computational capabilities that enable compute-intensive scientific applications to run faster or more efficiently. An SGI Origin 2400 ([nimbus.nih.gov](http://nimbus.nih.gov)) augments helix by running specific scientific applications or user programs that require long execution times. The NIH Biowulf Cluster ([biowulf.nih.gov](http://biowulf.nih.gov)) is a Beowulf parallel processing system that currently has 488 processors. Biowulf was built by members of the Helix Systems staff and runs the Redhat Linux operating system. A pair of SGI Origin 2000s with 48 processors between them ([galaxy/quasar](http://galaxy/quasar)) are designed for the development and execution of high performance parallel applications. The SGI systems run the IRIX operating system, and are jointly funded by the Division of Computer System Services (DCSS) and the Division of Computational Bioscience (DCB).

### Helix Systems Software

<http://helix.nih.gov/apps>

In addition to the standard Unix tools for software development, text formatting, and network communications, software packages include:

#### *Scientific Applications*

BioInformatics: GCG, Fasta, Blast, ClustalW, sequence format converters, BoxShade  
Structural Biology: X-Plor, Quest, Gaussian, Charmm  
Molecular Modeling: AMBER, Charmm, DOCK, Fdiscover, LOOK, Insight, NAOMI, Sybyl. Available on helix through MMIGNET  
Mathematical/Graphical Analysis: Mathematica, MATLAB, S-PLUS, IMSL, xmgr, Xplot  
Image Analysis: Analyze, AnalyzeAVW, AVS, IDL, xv, imgworks, convert, GIMP, GPHIGS, PHIGURE  
Molecular Graphics: Grasp, Molscrip, Molauto, PovChem, Povscript, PovRay, Ribbons

#### *Biological Databases*

GenBank: nucleic acid sequences  
PIR: protein sequences  
Genpept: protein translations from Genbank  
SwissProt: curated and highly annotated protein sequence database  
PDB: protein structures  
Cambridge Structural Database: small organic and organometallic molecules

#### *Programming Language/Tools*

C, FORTRAN 77, Fortran 90, Lisp, gcc, C++, and other typical Unix tools like awk and perl  
Vector compilers, MPI library, batch systems  
Static analyzer, debugger, and performance analyzer tools

#### *Subroutine Libraries*

IMSL: mathematical and statistical routines  
FIGARO: 2- and 3-d interactive graphics routines

#### *Network Services*

mail, pine, and Emacs rmail: e-mail readers  
ftp: Internet file transfer utility  
Kermit: file transfer via modem  
X Window System: supports X-windows scientific applications such as S-PLUS, Mathematica, MATLAB, SeqLab.  
Netscape and lynx: web browsers  
Tin, rn, xrn: newsgroup reader  
WebTermX: Web browser plug-in that lets Windows PCs run the X Window System  
eXodus: X Windows System for Macintosh

#### *Editors*

Pico, vi, edt, nedit, xedit, and GNU Emacs: full-screen editors  
ed and ex: line editors

### Web-based Services

<http://helix.nih.gov/webapps>

Xwindows: Graphics applications run on helix can be displayed on a desktop Mac or PC

Scientific applications: GCG-Lite, Molecules'R'Us, SeqWeb, and other web interfaces to scientific tools

Literature Searching: Web of Science, a citation-oriented database of scientific literature. Contains the Science Citation Index Expanded and the Social Science Citation Index Expanded

Porpoise: automatic alert service for new scientific literature that searches the weekly updates of the Web of Science

WHALES: automatic alert service for new sequences in the major nucleotide and protein databases  
NIH Directory and Email Forwarding Service

### Helix Systems Hardware

The SGI Origin 2000 system ([helix](http://helix)) consists of 8 processors based on the MIPS R12000 chip. Each CPU has shared access to 2 GB of memory.

The SGI Origin 2400 ([nimbus](http://nimbus)) consists of 8 processors based on the MIPS R12000 chip. Each CPU has shared access to 4 GB of memory and 20 GB of swap space.

The 32-processor Origin ([galaxy](http://galaxy)) utilizes MIPS R10000 processors and has a total of 8 GB of system memory. The 16-processor Origin ([quasar](http://quasar)) utilizes MIPS R12000 processors and has a total of 4 GB of system memory.

# NIH COMPUTER CENTER Hardware and Software

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The Biowulf cluster consists of 488 dual-processor Pentium 450 MHz, 550 MHz and 866 MHz nodes, most with 512 MB of memory and 8 GB of disk. Each node is connected to a fast Ethernet switch (100 Mb/s). For applications that can take advantage of more memory

and higher network speeds, some nodes contain as much as 2 GB of memory and others are connected to a gigabit speed network.

The Helix systems are restricted to NIH use.

## ALW SYSTEM

<http://www.alw.nih.gov>

The Advanced Laboratory Workstation (ALW) System is a general-purpose, open, distributed computing system. All Advanced Laboratory Workstations are interconnected by the NIH campus-wide network, which they use to share resources and access services. The AFS file system provides distributed file services.

### ALW System Hardware

#### *Client workstations*

Sun SPARCstations  
Silicon Graphics

#### *File Servers*

5 servers with combined storage of over 300 GB

### ALW Application Software

#### *Genomic sequence analysis packages*

Refer to <http://www-bimas.cit.nih.gov/>

#### *Image processing*

Analyze - medical image processing  
Khoros - abstract visual language  
MEDX - medical imaging processing

#### *Mathematics packages*

Mathematica  
Matlab

#### *Molecular modeling software*

Refer to <http://cmm.info.nih.gov/modeling>

#### *Statistical packages*

Prophet  
SAS  
S-PLUS

#### *Office automation applications*

StarOffice - integrated spreadsheet, word processing and graphics  
FrameMaker - desktop publishing  
WordPerfect - word processing

#### *Other software*

Emacs - text editor  
Gnu software and development tools  
Internet Explorer - web browser  
Netscape - web browser  
PTR - problem reporting system for ALW  
Softwindows95 - Windows95 emulator

## NETWORKS

### *NIHnet*

a high-speed network backbone that interconnects NIH LANs, the Computer Center central servers—enterprise (OS/390, Open Systems, and Windows NT/2000 Application Servers) and scientific (Helix and ALW Systems)—and the Internet. The LAN protocols that are supported for NIHnet connectivity include TCP/IP, AppleTalk, and IPX. Users on NIHnet LANs with these protocols are provided with remote login and high-speed access, fast file transfer, and local and worldwide electronic mail connections. Dialup access to NIHnet is available through Parachute.

### *Internet*

an international collection of networks, supported by major research institutions, that communicate with each other using TCP/IP protocols. The Internet offers file transfer, remote login (telnet) electronic mail, and World Wide Web connections.

### *NIHnet Mail Gateway*

a set of gateways, allowing the exchange of electronic mail among users of all mail systems supported at NIH and between NIH users and other users on the Internet. (Note: not all mail systems support the exchange of attachments).

# COMPUTER Services Telephone Directory

Service	Office	Bldg/Rm	Telephone (301)
<b>ENTERPRISE SYSTEMS (OS/390), Unix, Windows NT/2000 Servers)</b>			
Database Support	Database Systems Branch	12/2200	496-9158
IMS Support	Database Systems Branch	12/2200	496-6244
Help Desk	TASC	12A/1011	594-6248
New Applications	Application Services Branch	12A/4011	496-5524
Operating Schedule – OS/390	(recording)	--	402-2211
Security Investigations and Assistance	TASC	12A/1011	594-6248
Fax Number	--	--	496-6905
Security Policy	CIT Security Coordinator	12A/4033	496-1053
Tape Library	Systems Operations Mgmt. Branch	12/1100	496-6021
<b>SCIENTIFIC SYSTEMS (Helix and Advanced Laboratory Workstation)</b>			
Help Desk - ALW**	TASC	12A/1011	594-6248
Help Desk - Helix	TASC	12A/1011	594-6248
Operating Schedule – Helix, EOS	(recording)	--	402-2212
Operator - Helix	--	12/2200	496-6755
<b>CONNECTIVITY SERVICES (E-mail, Networks, File Transfer, Access to Enterprise and Scientific Systems)</b>			
Help Desk	TASC	12A/1011	594-6248
<b>GENERAL SERVICES</b>			
Accounts/Billing, Registration	TASC	12A/1011	594-6248
ADB Support**	TASC	12A/1011	594-6248
Application Programming**	Division of Enterprise and Custom Applications	Federal Bldg.	594-6248
Computer Center General Policy	Director, Division of Computer System Services	12A/4039	496-5381
Computer Center Security Policy	CIT Security Coordinator	12A/4033	496-1053
Disaster Recovery Process	Disaster Recovery Coordinator	12A/4033	496-1053
Documentation/Publications	Technical Information Office	12A/1011	594-6248
Output Distribution and Foreign Tape Handling			
NIH Campus	Output Distribution	12A/1000	496-6183
Parklawn Building	Output Distribution	2B70	443-4253
Public Information on CIT	Information Office, CIT	12A/4063	496-6203
Special Tape Handling	Output Distribution	12A/1000	496-6183
Statistical Packages	TASC	12A/1011	594-6248
TDD Line for Hearing Impaired	TASC	12A/1011	496-8294
Telecommunications Problems	TASC	12A/1011	594-6248
Training	TASC	12A/1011	594-6248

\*Non-NIH number; requires "9" prefix. \*\*Services available to NIH employees only.

***World Wide Web access to CIT through <http://cit.nih.gov>***

TASC (Technical Assistance and Support Center) is open 8:00 A.M. – 5:00 P.M.

Telephone assistance is available 7:00 A.M. – 6:00 P.M.

# Online Services Directory

Service	Internet Host Name	Dialup Access (301)	Status (301)
<b>OS/390 (MVS) - South System</b>			
WYLBUR (network)	<b>WYLBUR.CU.NIH.GOV</b>	402-2221	402-2211
2400-19200 bps (dialup)		*800-358-2221	
TSO (network)	<b>TSO.CU.NIH.GOV</b>	402-2223	402-2211
2400-19200 bps (dialup)		*800-358-2223	
TSO, DB2, IMS (Full-Screen 3270) (network)	<b>TN3270.CU.NIH.GOV</b>		402-2211
2400-9600 bps (dialup)		402-2227	
IBM Batch (RJE Batch)	<b>N/A</b>		402-2211
2400-9600 bps		402-2228	
Network File Transfer	<b>FTP.CU.NIH.GOV</b>	N/A	N/A
<b>OS/390 (MVS) - Titan</b>			
(Standard System)			
TSO (Full-Screen 3270)	<b>TN3270.TITAN.NIH.GOV</b>	N/A	402-2211
RJE Batch	<b>N/A</b>	480-0744	402-2211
2400-9600 bps (dialup)			
Full-Screen 3270	<b>N/A</b>	480-0748	402-2211
2400-9600 bps (dialup)			
Network File Transfer	<b>FTP.TITAN.NIH.GOV</b>	N/A	402-2211
<b>Enterprise Open Systems (Unix)</b>			
Compaq/Digital AlphaServers	<b>EOS.NIH.GOV</b>	N/A	402-2212
<b>Helix Systems</b>			
SGI Challenge System	<b>HELIX.NIH.GOV</b>	402-2222	402-2212
2400-33600 bps		*800-358-2022	
NIH Biowulf Cluster	<b>BIOWULF.NIH.GOV</b>	N/A	402-2212
<b>NIHnet access through Parachute</b>	<b>N/A</b>	402-6830	594-6248
		*800-827-0124	

## NOTES

- To access 402, 435, 443, 451, 480, 496, 594, or 827 numbers from other 402, 435, 443, 451, 480, 496, 594, or 827 numbers, use only the last 5 digits.
- N/A: Not Applicable
- All telephone numbers are accessible through FTS.

\* These 800 numbers should be used only by persons who do not have access to FTS2001.

## Major Contributors

Pat Ashburn, DCS  
Leslie Barden, DCS  
Tom Bodine, OCTO  
Bronna Cohen, DNST  
George Cushing, DCSS  
John Dickson, DCSS  
Kristen Dunn-Thomason, DCS  
Jim Gangler, DCSS  
Lori Gordon, DECA  
Dave Hunter, DCS  
Lesa Jones, DCS  
Bob Klein, DCSS  
Jeanne Krause, DCSS  
Dat Le, DCSS  
Laura Mulieri, DCS  
Lanny Newman, OD/OPEC  
Paula Ptacek, OD/OPEC  
Kathy Scalzi, DCSS  
Norma Stern, DCSS  
Ed Suiter, DCSS  
Ginny Vinton, DCSS  
Jeff Wilkerson, DCS

DCSS	Division of Computer System Services
DCS	Division of Customer Service
DECA	Division of Enterprise and Custom Applications
DNST	Division of Network Systems and Telecommunications
OCTO	CIT, Office of the Chief Technology Officer
OD/OPEC	CIT, Office of Planning, Evaluation, and Communication